vaccine are less likely to occur unless the recipient is allergic to feathers or eggs. Semple vaccine is more likely to cause adverse reactions. If it does, preventive treatment should immediately be changed to DEV. One or two human deaths a year continue to occur in the United States due to lack of preventive treatment, but deaths can occur due to reaction to antirabies vaccine. It is imperative that a careful investigation as to the condition and history of the biting animal can be made before treatment is begun.

Local health departments should be consulted concerning animal bite problems. All animal bites are reportable to it or the agency which confines animals for observation. Animal brain tissue can be examined for rabies in the local public health laboratory or California State Department of Public Health, Virus Laboratory. If antirabies serum or vaccine is needed, the local health department can assist in getting it. Consultation in any diagnostic or treatment problem is also available.

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Methyl Mercury

The existence of environmental mercury contamination became evident only after the recent discovery of "Minimata disease" in Japan. One hundred and sixty-eight cases of severe neurological disease occurred, with 52 deaths and 23 congenitally brain-damaged infants, were reported in some 400 live births. The elusive cause was finally determined to be the consumption of fish and shellfish contaminated with mercury discharged from chemical plants. Industrial mercury discharges, previously thought to be inert, are methylated by microbial systems in the bottom sediment of fresh and salt water. The methyl mercury thus formed enters the aquatic food chain and undergoes tremendous concentration as it ascends this pathway from smaller to larger species.

The mercury in fish is virtually all in the form of alkyl (methyl) mercury which is many times more toxic than metallic, inorganic or aryl forms of mercury. Inorganic and alkyl mercury poisoning are manifested as two distinct symptom complexes, although some overlapping may exist in heavily exposed cases. They appear to be separate clinical entities showing marked differences in absorption, excretion, specific tissue localization, transplacental migration, pathological picture, occurrence of chromosome damage and reversibility of symptoms.

A second source of alkyl mercury contamination is the use of agricultural fungicides applied to seed grain. This practice has been responsible for several tragic epidemics (Iraq, Pakistan and Guatamala) and the celebrated case of the Huckelby family in New Mexico. It has also caused serious contamination of seed-eating birds, including pheasant in California. In addition, methyl mercury undergoes translocation into the grain grown from the treated seed, thus contributing to wide-spread, if low-level, human and animal exposure to this cumulative toxin. In 1970 almost all seed grain planted in California was treated with alkyl mercury. By the end of 1972, this practice is scheduled to be eliminated.

The FDA "guideline" level of 0.5 ppm for mercury in fish has been critically examined in many quarters and appears to be on a sound basis, although the margin of safety is not large. Pregnant women carry an increased risk, and there is evidence that some persons may be hyper-susceptible to mercury. However, in this country there has been only one reported case of illness attributed to eating mercury-contaminated fish. On the basis of present knowledge it would be unfortunate if public over-reaction

deprived people of the excellent and inexpensive source of dietary protein provided by fish, since almost all commercial fish (other than tuna and swordfish) contain levels of mercury far below the FDA guideline.

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Isolation Techniques for Use in Hospitals

Physicians and hospital staff are continuously faced with the need for making decisions regarding proper isolation techniques for patients suffering from a wide variety of illnesses. The Public Health Service has recently published an up-to-date, brief, practical, comprehensive booklet which is an important resource in this regard, for any hospital. The publication noted below is available from the U.S. Government Printing Office in Washington. The current cost is $1.00 per copy.

DONALD G. RAMRAS, M.D., M.P.H., F.A.C.P.M.

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Chemoprophylaxis for Malaria

Malaria remains a highly prevalent and serious endemic disease in many tropical and subtropical countries. In recent years, several Californians have acquired malaria while traveling abroad because they did not receive adequate chemoprophylaxis. Two deaths due to falciparum malaria have been recorded in 1971. Endemic areas where prophylaxis may be needed include Africa, Haiti, Central America, the southern west coast region and southern states of Mexico, South America (with the exception of Venezuela, Uruguay, Chile and Argentina), the Southern Middle East, Southeast Asia, Korea and some islands of the Southwest Pacific region.

It should be recognized that the risk of malaria is not necessarily uniform throughout an entire country and that local conditions to a large extent dictate the need for medication. Each traveler's itinerary should be reviewed to determine whether it will take him into areas in which preventive measures are indicated. With the exception of tropical Africa where the risk of life-threatening falciparum malaria is uniformly high, malaria prophylaxis usually is not indicated when the itinerary includes only major cities usually frequented by tourists.

Chloroquine phosphate (Aralen®) is recommended for chemoprophylaxis of malaria. The adult dosage is 500 mg (300 mg base) once a week starting the week before possible exposure. Suppression should be continued at this dosage throughout the time spent in malarious areas and for at least six weeks thereafter. This regime will provide protection against falciparum malaria with the exception of some strains in Southeast Asia and South America which are chloroquine-resistant.

Infections caused by P. vivax, P. malariae and P. ovale (relapsing species) are not prevented but their symptoms are suppressed. Chloroquine supplies have been temporarily short, but the manufacturer has recently indicated that the drug is again readily available for the treatment and prophylaxis of malaria.

Primaquine phosphate is the drug used for radical cure of relapsing species of malaria. The adult dosage is 26.3 mg (15 mg base) daily for 14 days following return from the malarious area. The routine use of primaquine for all civilians who have been in a malaria endemic area is questionable. Intensity of exposure to relapsing species should determine its use. Primaquine may cause hemolysis in persons with glucose-